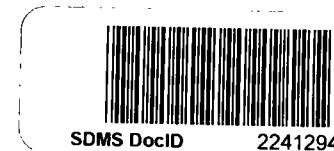


To: Ann L. Breslin@NCAWM@DNREC
Cc:
Bcc:
From: James T. Chaconas@Water@DNREC
Subject: re: fwd: vegetation of non-tidal areas of 12th Street Site
Date: Monday, March 12, 2001 at 12:07:28 pm EST
Attach: BEYOND.RTF
Certify: N



Ann, I discussed the list w/ Bill McAvoy and he made the following recommendations.

Forget the Puccinella distans and Carex vesicaria. Keep the Leersia oryzoides and Scirpus fluviatilis. Hibiscus moscheutos, Peltandra virginica and Scirpus americanus should also work.

On the river bank keep the Panicum dichotomiflorum but forget the Carex cristatella and Agrostis stolonifera. Instead try Tritens flavus and Elymus virginicus.

On the upper bank forget the Festuca elatior but keep the others and maybe try Andropogon scoparius. It seems logical too to plant some shrubs and trees on the upper bank. There's a lot to choose from here. Black willow, certain dogwoods, spicebush, winterberry, Viburnum sp.

Hope this helps. Give me a call if you need some more help. Jim

----- Original Text -----

From: Ann L. Breslin@NCAWM@DNREC, on 3/9/01 3:25 PM:

Comments By: Ann L. Breslin@NCAWM@DNREC
Originally To: ismtp@oissmt2@servers[<Guy.Christopher@epamail.epa.gov>], Ann L. Breslin@NCAWM@DNREC
Originally From: <Towle.Michael@epamail.epa.gov>
Original Date: 3/8/01 1:10 PM
Comments:

Hello to both of you.....any wisdom??

Ann L. Breslin - Environmental Scientist III
Delaware Department of Natural Resources and Environmental Control
391 Lukens Drive, New Castle, Delaware 19720
Phone - (302) 395-2610, Fax - (302) 395-2611

-----[Original Message]-----

We have been investigating grass species to plant in the non-tidal area of the 12th Street Site. The non-tidal area has portions that will be frequently wet (drainage ditch and pond area), potentially wet (parts of Creek bank) and routinely dry (the two mounded areas). Although slopes are shallow, there are slopes nonetheless that require some sort of control against excessive erosion.

We have a goal to revegetate with beneficial (and preferably native species) and a requirement to revegetate with species that provide erosion control.

We have not been 100% successful in finding species that serve both purposes.

Attached is a file that contains proposed grass mixtures to plant on the 12th Street Site. For the most part, the species that best control erosion are the species that are not native to Delaware.

These species are in addition to the species already selected for planting in the tidal area of the Site selected for revegetation (Pond). Remember at this time, we are holding off on final vegetation of the Creek bank with tidal/wetland species since we are not firm on whether the Removal Action

remedy will be the final remedy for the Site.

Please evaluate the attached and let me know if you agree or would rather see a different seed mix for the non-tidal areas of the Site. Please respond within a week to allow me time to find a source for these grasses.

ORIGINAL

Ann, should this go to Bob's group ??

----- Forwarded by Michael Towle/R3/USEPA/US on 03/08/01 12:50 PM -----

"McLaughlin,
Nancy" To: Michael Towle/R3/USEPA/US@EPA
<McLaugN@ttem cc:
i.com> Subject: grass

03/08/01
11:26 AM

Here is the grass list.

(See attached file: grasses.doc)

Pond Drainage Ditch

• <i>Leersia Oryzoides</i>	rice cutgrass	80.00/lb
• <i>Scirpus fluviatilis</i>	river bulrush	180.00/lb
<i>Hibiscus moscheutos</i>	swamp rose mallow	(<i>Hibiscus jubatum</i> = 288.00/lb)
• <i>Peltandra virginica</i>	arrow arum	\$12/lb
• <i>Scirpus americanus</i>	bulrush three square	\$180/lb

ORIGINAL

River Bank

<i>Panicum dichotomiflorum</i>	Not found	8.00/lb
<i>Tritens Flavus</i>	Not found	
• <i>Elymus virginicus</i>	Virginia wild rye (ERNST)	[7.00/lb]

Upland Areas

• <i>Panicum virgatum</i>	switchgrass	2.75 - 3.50/lb (PLS 3.50)
<i>Carex scoparia</i>	Broom Sedge	160/lb
<i>Andropogon scoparia</i>	ERNST Little Bluestem	[88.80 PLS ERNST]

shrubs/trees

<i>Black willow</i>
certain dogwoods
spicebush
winterberry
<i>Viburnum spp.</i>

Oncopnik

Hibiscus moscheutos L. (Malvaceae)

Hibiscus moscheutos ssp. *incanus* (Wendl. f.) Ahles = *Hibiscus moscheutos* ssp. *moscheutos* (Malvaceae)

Hibiscus moscheutos ssp. *moscheutos* L. (Malvaceae)

Hibiscus moscheutos ssp. *palustris* (L.) Clausen = *Hibiscus moscheutos* ssp. *moscheutos* (Malvaceae)

Hibiscus moscheutos var. *purpurascens* Sweet = *Hibiscus moscheutos* ssp. *moscheutos* (Malvaceae)

Peltandra virginica (L.) Schott (Araceae)

Scirpus americanus auct. non Pers. = *Schoenoplectus pungens* var. *pungens* (Cyperaceae)

Scirpus americanus Pers. = *Schoenoplectus americanus* (Cyperaceae)

Scirpus americanus var. *longispicatus* Britt. = *Schoenoplectus pungens* (Cyperaceae)

Scirpus americanus var. *polyphyllus* (Boeckl.) Beetle = *Schoenoplectus pungens* (Cyperaceae)

Elymus virginicus L. (Poaceae)

Elymus virginicus var. *australis* (Scribn. & Ball) A.S. Hitchc. = *Elymus virginicus* var. *virginicus* (Poaceae)

Elymus virginicus var. *glabriflorus* (Vasey) Bush = *Elymus virginicus* var. *virginicus* (Poaceae)

Elymus virginicus var. *halophilus* (Bickn.) Wieg. (Poaceae)

Elymus virginicus var. *hirsutiglumis* (Scribn.) A.S. Hitchc. = *Elymus virginicus* var. *virginicus* (Poaceae)

Elymus virginicus var. *intermedius* (Vasey) Bush = *Elymus virginicus* var. *virginicus* (Poaceae)

Elymus virginicus var. *jejunus* (Ramaley) Bush = *Elymus virginicus* var. *virginicus* (Poaceae)

Elymus virginicus var. *virginicus* L. (Poaceae) ...

Andropogon scoparius Michx. = *Schizachyrium scoparium* ssp. *scoparium* (Poaceae)

Andropogon scoparius var. *ducis* Fern. & Grisc. = *Schizachyrium scoparium* ssp. *scoparium* (Poaceae)

Andropogon scoparius var. *frequens* F.T. Hubbard = *Schizachyrium scoparium* ssp. *scoparium* (Poaceae)

Andropogon scoparius var. *littoralis* (Nash) A.S. Hitchc. = *Schizachyrium scoparium* ssp. *littorale* (Poaceae)

Andropogon scoparius var. *polycladus* Scribn. & Ball = *Schizachyrium scoparium* ssp. *scoparium* (Poaceae)

Andropogon scoparius var. *septentrionalis* Fern. & Grisc. = *Schizachyrium scoparium* ssp. *scoparium* (Poaceae)

Vegetation options for 12th Street upland areas

Latin name	common name	height	range	reprod/season	environment	Notes
<i>Alopecurus pratensis</i>	meadow foxtail	4-8 dm	U.S.	perennial	moist woods	erect or decumbent
<i>Eragrostis curvula</i>	weeping lovegrass	6-18 dm	north to PA where common	perennial	well drained soils	not native; tufted; fast growing; erosion control
<i>Festuca pratensis</i>	meadow fescue	3-12 dm	U.S.	perennial	fields, meadows, moist soil	native Europe, basally decumbent culms
<i>Festuca rubra</i>	red fescue	3-10 dm	Que to GA	tufted perennial w/ rhizome	open habitats, coastal regions	forms tufts
<i>Leersia lenticularis</i>	catchfly-grass	5-15 dm	se. VA to FL	perennial w/ rhizomes	swamps & streambanks on coastal plain	
<i>Leersia Oryzoides</i>	rice cut-grass	15 dm	Que. To FL	perennial w/ rhizomes	swamps, meadows, muddy soil	
<i>Lespedeza cuneata</i>	chinese lespedeza	1.5 dm	north to NJ	perennial	medium well drained soil	roots penetrate soil to 3 feet
<i>Oryzopsis racemosa</i>	blackseed ricegrass	4-10 dm	Que/Ont s. to VA	Temp. to sub-trop. w/ rhizome	dry to moist woods and wooded dunes	
<i>Panicum virgatum</i>	switchgrass	2 meters	Que. To Arizona	rhizomes	woods, prairies, dunes, brackish marshes	large tufts
<i>Poa alsodes</i>	bluegrass	3-10 dm	N.S. to DE	without rhizomes	moist woods	loosely tufted culms
<i>Poa chapmaniana</i>		3 dm	DE to gulf	annual	open grounds and fields	tufted erect culms
<i>Poa palustris</i>	fowl meadow-grass	5-15 dm	s. to VA (circumboreal)	without rhizomes	wet meadows, damp soil	loosely tufted culms, decumbent base

subject to
winter kill
not generally
adapted in US

Original